READING Kilobaud MICROCOMPUTING ?

As we state on the cover of the magazine, Kilobaud Microcomputing is designed to help the newcomer to computing to understand computers, while still being interesting to the experts. We try to avoid the use of computerese as much as possible. You'll also find a wealth of software in Kilobaud Microcomputing and more articles every month than any other magazine.

The crew putting out Kilobaud Microcomputing are the ones who originated Byte and are the leaders in the field. [illegible] Kilobaud Microcomputing has a [illegible] laboratory for checking [illegible]

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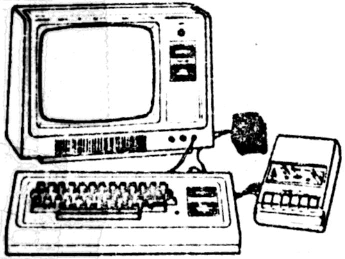
INSTANT SOFTWARE

Program Designed for use with
TRS-80*
16K
LEVEL II

TRS-80* Utility I

- **DUPLIK—Cassette Duplication**
- **RENUM—Program Renumbering**

* A trademark of Tandy Corporation



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Peterborough, NH 03458 USA

0081R

TRS-80 UTILITY I

Ever wonder how some programmers give their programs that clean, professional look? Well the secret's out! Instant Software presents the TRS-80 Utility I package. Included in this package are:

Duplik

This program is so good that the technical staff at Instant Software uses it to make the masters for reproducing these cassettes. With Duplik, you can duplicate any BASIC, assembler, or machine language program, verify data, and record two or more programs onto one cassette. You can even do Level I and II programs on any Level II TRS-80.

Renum

Have you ever faced the problem of trying to add a line to your program, but you've run out of line numbers? Weep no more! The Renum program will easily renumber your listings with only a few simple commands. With this program your listings will look as crisp and efficient as a new TRS-80.

DISCLAIMER

Nothing in this world is completely perfect, including this program. I say this despite the yeoman efforts of the programmer who originally wrote and debugged it and the people in the Instant Software lab who worked far into the New Hampshire nights, all toward providing you with the best possible program.

Please enjoy it. If you come up with any improvements, you should let me know so I can pass along your ideas to other users.

Please note that there is no warranty expressed or implied that this program is going to do anything other than load and work. We don't guarantee that you will enjoy the game programs, that you will make or save money with business programs, or learn anything from educational programs. We don't guarantee that you will lose weight with a dieting program or avoid disasters with a biorhythm program. But if any program causes suffering (other than acute aggravation) or misfortune, we want to hear about it by mail, not through your lawyer. You are entirely on your own in using the programs.

If you run into problems while using a program, you can communicate with us . . . preferably by mail, and we'll try to help out. If a problem turns out to be commonplace, we'll put the update information in MICROCOMPUTING. You are supposed to read MICROCOMPUTING anyway.

Wayne Green

TRS-80 LOADING

Unless otherwise indicated on the labels, Level I will be on one side of the cassette and Level II on the other. Make sure that your system is on, the recorder is plugged in, and the tape is rewound. Punch out the tabs on the cassette to prevent accidental erasure. Now insert the tape into your recorder and press PLAY.

Type NEW and press ENTER (E). Check the available memory by typing P.M.(E) for Level I or ?MEM(E) for Level II. Now press PLAY on the recorder and type CLOAD(E). In about ten seconds two asterisks should appear on your screen, with the right-hand one blinking. If it doesn't blink, you're not loading.

The TRS-80 is very sensitive to audio levels. If the program doesn't load, rewind the tape, adjust the volume level, and repeat the loading sequence above.

After each load, run a memory check and note how much memory the program uses.

Should you be unable to load, check the cassette with another system. If it's still no go, return it to:

Instant Software Miseries
Peterborough NH 03458

We'll check to see whether it was the cassette or your system that was awry and get you a replacement.

ACCIDENTAL ERASING

Until you've tried it, you won't believe how easy it is to screw up a data cassette. For instance, the magnet in any loudspeaker can do a fantastic job of removing part of the data . . . and you'll find loudspeakers in portable radios, cassette recorders, TV sets, etc. Power supplies will do even better. No one can even estimate how many tapes have been wiped out by these little TRS-80 power units . . . or by putting cassettes on top of the monitor, where its electromagnetic field can weave its subtle work.

Do not treat your cassettes casually. Give them extra care and attention. Keep them away from anything electrical, magnetic or dusty at all times.

Well, accidents can happen, even to the most careful of us. One of your kids can try out a data cassette and push the record button . . . etc. You should ward this off by punching out the tabs on the back of the cassette to prevent recording. If things do go awry, we'll redo your cassette for you for a nominal service charge of $2. Just send back the original cassette, a note as to what went wrong (we like to keep statistics) and the $2. We'll fix it up for you and get it back as quickly as we can. Try not to get worried if it takes three weeks . . . one week each way for the post office (when they are up to that rigorous a schedule) and a week for us to horse around.

COPYRIGHT

This program is protected by copyright. This means that it is illegal to make a copy of the tape or of a listing of the program. *Any* copy. We feel strongly enough about this to offer a $10,000 reward for the conviction of anyone copying this program. This means that when your life-long friend and bosom buddy asks you to run off a copy for him, you have, at that moment, to decide whether he wants the program or the ten thou. If you do decide to make the copy, you'd better be very nice to said friend from then on.

Better if someone is insistent, is to give them the money to buy a cassette of their own. It could be cheaper in the long run.

Why the fuss? We want to make sure that programmers are paid for their programs and paid well. The more money we can pay in royalties, the better programs you'll have.

IMPROVEMENTS

There are very few programs which cannot be improved. If you work out some improvements to this program, it could be worth your while to send them in for possible use in an updated version of the program. Those who contribute to an updated program will share in the royalties which result. Instant Software Inc., Peterborough NH 03458.

RENUM

The Renum program from Instant Software will let you easily renumber lines in any TRS-80 Level II program. Give your programs the professional look with this valuable program.

To use this program you must:

1. First CLOAD the program you want to renumber.
2. Then load the Renum program into the computer. This program is a machine language program and must be entered using the SYSTEM command. The procedure is as follows:

a. Rewind the Renum cassette, insert it in the recorder, and push the play button.

b. You should have a READY signal and cursor. Type in the word SYSTEM and hit ENTER.

c. The computer should respond with "*?". Type in the name RENUM and hit ENTER.

d. The program should then start loading.

e. After the Renum program has finished loading, the computer will respond with "*?". Type in slash (/) and hit ENTER.

The Renum program should now run in your computer.

The computer will ask what is the number you want for the first line of your renumbered program. Enter any whole number.

It will next ask for the number of steps between lines of the program. Again, enter 1, 2, 5, 10, or whatever you want.

After a slight pause, depending on the length of the renumbering job, the computer will give you a READY signal and cursor.

You can now LIST your program and see the new line numbers. to CSAVE the renumbered program, use the standard Level II CSAVE routine.

If you are not satisfied with the renumbering, you can restart the Renum program by entering the following commands:

A. Type in SYSTEM and hit ENTER.

B. The computer will respond with "*?".

C. Type in /28672 and hit ENTER.

You can even run your program to see that it operates correctly and jump back into the Renum program.

Take care not to exceed your computer's memory. The Renum program is less than 1K long. So, make sure that the program you are renumbering and Renum can fit in your memory with some room left over for the computer's use.

All line numbers called by:

GOTO
GOSUB
ON GOTO
ON GOSUB
IF
THEN
ELSE
RUN
RESUME

must not have spaces between the digits of the line numbers. If Renum doesn't find a line number called for by an instruction, it displays "ERROR. UNDEFINED LINE.". This will stop everything, and you'll have to reload the programs after correcting the problem.

DUPLIK

Duplik is a duplicator program for the TRS-80 Level II. It lets you make copies of BASIC, assembler and machine language programs. You can load several programs into the buffer and record them all on one cassette with simple commands. Duplik also allows you to check your recorded program against what you have in memory.

Duplik is a machine language program and must be loaded with the SYSTEM command:

a. Rewind the Duplik cassette, insert it into the recorder, and push the play button.

b. You should have a READY signal and cursor. Type in the word SYSTEM and hit ENTER.

c. The computer should respond with "*?". Type in the name DUPLIK and hit ENTER.

d. The program should then start loading.

e. After the Duplik program has finished loading, the computer will respond with "*?". Type in slash (/) and hit ENTER.

The Duplik program can now run in your computer.

Here is a list of the user commands:

R = Read program
RF = Read following program
C = Check program
CF = Check following program
W = Write program on tape
L = Define which level
B = Return to BASIC

The computer will respond with "ORDER:?". Reply with one of the above commands.

Command R lets you load a program into the buffer, the space in memory that doesn't contain the Duplik program. Two fixed stars appear in the upper right corner of the screen while a program is loading and disappear when finished.

Command RF will tell the computer to load the following program(s) into the buffer. With this command you can merge two machine language programs, for example, to later record one whole program.

The first program will be loaded using the R command; the rest will load with the RF command.

Command C will execute a checksum control between the program on the cassette and the contents in the buffer. Essentially it is a bit counter and will match the number of bits in the program in memory with the number in the cassette.

The checksum routine starts at the beginning of the buffer with the first program loaded. Rewind the program on the cassette and press the play button. Type C and the computer will match the programs against each other. If an error is detected, it will display "ERROR"; otherwise, it will display "CORRECT".

Command CF will execute a checksum between the next program in the buffer and a program on a cassette. So, the first checksum will require command C and the first program in the buffer, and the next program will need CF and the next program in the buffer. It will give the same display as C.

To return to "ORDER:?", hit ENTER.

Command W will write everything in the buffer onto tape. It will write all the programs in

sequence so you'll only need one cassette to load the programs into your computer. The cassette recorder must be ready to record before you use command W.

Command B will return you to BASIC.

Command L will let you tell the computer whether it is dealing with a Level I or II tape.

As an example of a typical run, let's say you want to make a copy of three Level II programs (BASIC, assembly, or machine language).

After loading Duplik, the following commands are needed (We have underlined what you must type):

CASSETTE LEVEL I OR 2:? 2 (Duplicate a Level I or II tape)

ORDER:? R ENTER (Read first program)

ORDER:? RF (Read second program)

ORDER:? RF (Read third program)

ORDER:? C (Checksum between data coming in from first program on cassette against first program in buffer)

CORRECT (Computer has verified the data)

ENTER (Will return you to ORDER)

ORDER:? CF (Checksum second program)

CORRECT

(Third program is done exactly the same way as above.)

ORDER:? W ENTER (Write a new tape)

(You can use the C and CF commands to check the new tape)

ORDER:? B (Return to BASIC)

Following the above sequence would give you a new program tape with all three programs merged into one data block.

The Duplick program requires 1K of RAM. When you load other programs into your machine, be careful not to exceed your available memory.

CASSETTE RECORDER MAINTENANCE

Often, when you have trouble loading a program, it's not the fault of the tape or your computer system. It may be a problem with your cassette recorder. The staff at Instant Software use a large variety of cassette recorders eight hours a day, five days a week. To insure that the recorders will keep up with the demands of our work load, they are subjected to a rigorous maintenance routine.

As you run a tape in any recorder, a particle of oxide may flake off the tape, or a bit of dust may settle from the air. These bits of debris may adhere to the play/record head, causing variations in the volume level and degrading the performance of your recorder.

To keep your recorder in top condition, clean the recorder heads regularly after every 15-20 loads or saves. Use denatured alcohol (available at any drugstore) and cotton-tipped swabs. Lightly dampen a swab and gently stroke the erase head, the record/play head, and the pinch roller. This will remove accumulated tape oxide and dust. You can also use a soft brush or vacuum cleaner to remove dust from the tape compartment.

Every time you press the record or play button, you put a small amount of stress on the play/record head. Eventually the head will be pushed out of alignment. This is one of the reasons why a program recorded when you first got your system will not load several months later or won't load on another system.

The cure is to have your recorder aligned by a qualified technician, or if you have the know-how, to align it yourself.

The technicians at Instant Software recommend using an industrial standard alignment tape (they use a Panasonic tape, part No. QZZCFM). This tape allows them to test for playback frequency response, playback level, and the head azimuth adjustment. The most critical aspect, especially for PETs, is the azimuth adjustment.

To run a test on your recorder, connect an oscilloscope to the earphone jack, insert the alignment tape into the recorder, push the play button, and adjust the head for the best waveform on the oscilloscope. If you lack test instruments, adjust the head for the loudest sound and best high frequency response without changing the recorder's volume setting.

Remember, your recorder is a critical link in your computer system. For the best performance, give it the best care.

• HEX PAWN
SHUTTLE CRAFT DOCKING
SPACE CHASE
SEA BATTLE

This four-game package is sure to provide hours of fun for the whole family.

Hex Pawn: Turn your TRS-80 into a model of artificial intelligence by playing a simple game.

Shuttle Craft Docking: Land your shuttle craft on the starship — even through varying gravity fields!

Space Chase: Seek out and destroy the enemy delta that's hidden in the star field.

Sea Battle: You must find and destroy the enemy fleet.

This package requires a TRS-80 Level I 16K.

Order No. 0041R $7.95

• DOODLES AND DISPLAYS II

Wait until your children get a hold of this package:

Doodle Pad: Draw pictures and save them on cassette tapes.

Symmetrics: An electric kaleidoscope that changes from black to white and back again. It's almost hypnotic!

Drawing: Like Doodle Pad, but for the serious artist. Over 40 user commands!

Random Pattern Display: The computer does the drawing, but those with itchy fingers can tamper.

Math Curves: Bring those Geometry lessons to life. Six different geometrical curves on the screen of your TRS-80.

Rug Patterns: Yes, it does design rug patterns and, with a choice of user or computer control, it can do a whole lot more.

For the Level II 16K TRS-80.

Order No. 0042R $7.95

• BOWLING LEAGUE STATISTICS SYSTEM

This package is the answer to the prayers of harried bowling league scorekeepers. The Bowling League Statistics System will keep a computerized list of league data, team data, and data for each bowler. It is extremely flexible and has a total of 16 different options to let you modify the program to suit your league's rules. The program is very easy to use and has extensive "built in" aids to help you along. Requires TRS-80 Level II 16K.

Order No. 0056R $24.95

- **BUSINESS PACKAGE III**

This package can change your TRS-80 into a full working partner for any businessperson.

Inventory: Maintain a computer based inventory for a constant inventory system.

Discount and Commission Percentages: Let your computer figure out mark up and discount calculations, sales tax and more. This is a perfect time-saving package for any small business.

For the TRS-80 Level I 4K.

Order No. 0061R $7.95

PROGRAMS FOR YOUR TRS-80

Look for these fine programs at a computer store near you and save time and money. Or, if you'd prefer, you can use the handy order form on the next page. Or, call toll-free 1-800-258-5473, and have your credit card handy.

☐ **HEX PAWN** (4K Level I-16K Level I)
Hex Pawn; Shuttle Craft Docking; Sea Battle; Space Chase
Order no. 0041R.................... $ 7.95

☐ **DOODLES AND DISPLAYS II** (4K Level II)
Doodle Pad; Math Curves; Random; Patterns Display; Symmetrics; Drawing; Rug Patterns
Order no. 0042R.................... $ 7.95

☐ **SANTA PARAVIA AND FIUMACCIO**
(16K Level I Level II)
Order no. 0043R.................... $ 7.95

☐ **BOWLING LEAGUE STATISTICS SYSTEM** (16K Level II)
Bowling Records-Startup
Bowling Records-Weekly
Order no. 0056R.................... $24.95

☐ **BUSINESS PACKAGE III** (4K Level I)
Inventory; Discount and Commission Percentages
Order no. 0061R.................... $ 7.95

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☐ Also filled out is my program order blank. Enclosed is $__________ for the programs marked on reverse side plus $1.00 handling fee.
MAIL TO: MICROCOMPUTING, PETERBOROUGH NH 03458

SOFTWARE OPPORTUNITIES

Anyone interested in writing software for fun and profit should send for our instruction sheet: "Dear Programmer." This describes, step by step, the process used by Instant Software for producing these programs. In addition to being able to make rather remarkable money as an author of a program, there are also opportunities to work on a freelance basis (at home) evaluating programs or converting them from one microcomputer system to another.

If you are thinking in terms of distributing your own programs, you can do worse than find out the benefits of having Instant Software do this job for you. Write for: "Selling Your Software The Easy Way."

Instant Software is looking for programs to publish and distribute – business programs, games, home programs, educational programs, scientific programs, etc. For more information please write to Instant Software, Peterborough NH 03458.